

AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough for six or more characters and double brackets for five or less characters; and 2. added matter is shown by underlining.

1. (Original) A method for determining a first and a second phase of a biphasic defibrillation shock pulse, one of said first phase and said second phase having variable energy, wherein upon application of said first phase and said second phase of said biphasic defibrillation shock pulse a desired response is produced in a patient's cardiac cell membrane, comprising:

providing a quantitative model of a defibrillator circuit for producing said biphasic defibrillation shock pulse;

providing a quantitative model of a patient that includes a variable heart component;

providing a quantitative description of a predetermined response of said cardiac cell membrane to said shock pulse; and

determining a quantitative description of a first phase and a second phase of said biphasic defibrillation shock pulse by selecting from a group consisting of items (a) and (b) as defined below:

- (a) determining a quantitative description of a first phase of said biphasic defibrillation shock pulse that will produce said predetermined response of said cardiac cell membrane, wherein the determination is

made as a function of said predetermined response of said cardiac cell membrane, said quantitative model of a defibrillator circuit, and said quantitative model of a patient, and wherein the quantitative description of the first phase provides for setting a time duration for said first phase based on said variable heart component, whereby an amount of energy to be delivered by said first phase varies according to the time duration that is set; and

determining a quantitative description of a second phase of said biphasic defibrillation shock pulse phase on said first phase; and

(b) determining a quantitative description of a first phase of said biphasic defibrillation shock pulse that will produce said predetermined response of said cardiac cell membrane, wherein the determination is made as a function of said predetermined response of said cardiac cell membrane, said quantitative model of a defibrillator circuit, and said quantitative model of a patient; and

determining a quantitative description of a second phase of said biphasic defibrillation shock pulse based on said first phase, wherein said quantitative

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description provides for setting a time duration for said second phase based on said variable heart component whereby an amount of energy to be delivered by said second phase varies according to said time duration that is set.